U S WEST, Inc.
1020 Nineteenth Street NW Suite 700
Washington, DC 20036
202 429-3120
Fax: 202 293-0561

Melissa Newman
Vice President - Regulatory Affairs

November 15, 1999

EX PARTE

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 – 12th Street, SW, TW-A325
Washington, DC 20554

RE: CC Docket No. 99-68

Dear Ms. Salas:

On Friday, November 12, 1999, Bob McKenna, Mark Holling, Bill Taylor and the undersigned, representing U S WEST, met with Tamara Preiss and Rodney McDonald, of the Common Carrier Bureau, Competitive Pricing Division to discuss the above-referenced proceeding. The attached material was distributed at the meeting and served as the basis of the discussion.

In accordance with Section 1.1206(b)(2) of the Commission's rules, an original and one copy of this letter and attachment are being filed with your office for inclusion in the public record of this proceeding.

Acknowledgment and date of receipt of this submission are requested. A duplicate of this letter is attached for this purpose.

Sincerely,

Melissa Newman /EBM

Melissa Newman

Attachments

cc: Tamara Preiss
Rodney McDonald

NATIONAL ECONOMIC
RESEARCH ASSOCIATES
ONE MAIN STREET
CAMBRIDGE, MASSACHUSETTS 02142
TEL: 617.621.0444 FAX: 617.621.0336
INTERNET: http://www.nera.com

n/e/r/a
Consulting Economists

AN ECONOMIC AND POLICY ANALYSIS OF EFFICIENT INTERCARRIER COMPENSATION MECHANISMS FOR ISP-BOUND TRAFFIC

William E. Taylor, Agustin Ros and Aniruddha Banerjee
National Economic Research Associates, Inc.
One Main Street
Cambridge, MA 02142

November 12, 1999

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I. INTRODUCTION

1. The emergence and rapid progress of the information age is having a profound impact on our economic, social, and political environment.[1] As we approach the turn of the millennium, there is no better testament to the transformation occurring than the increasingly important role the Internet is having in the daily lives of more and more people and institutions. Businesses are using the power of the Internet to reduce costs and improve overall operating efficiencies.[2] Individuals are finding that the Internet offers vast opportunities to obtain important information that can be used to make better-informed decisions on a host of market and non-market activities (i.e., advance career objectives and minimize expenditures on leisure activities). By reducing the cost of information to both producers and consumers, the Internet is reducing the losses in economic efficiency that result from market failure due to asymmetric information. The potential benefits from the continued growth of the information economy are enormous.

2. In order that the economy may reap the full potential of the Internet, public policy regarding the Internet must be consistent with, and lead to, the achievement of economic efficiency. In the long run, only policies that are consistent with economic efficiency provide the opportunity to achieve lower costs, lower prices, and new and innovative services. Moreover, because the market is now poised to provide these benefits without a jump-start from outside sources of subsidy, it is also important to minimize unintended distortions to competition elsewhere and, in particular, to local exchange competition. Finally, the

[1] The growth of the Internet in recent years—in terms of both volume and content—has been nothing short of astonishing. The conventional wisdom is that the Internet "doubles" every year, a rate of growth that is unprecedented in virtually every other sphere of economic activity.

[2] For example, businesses are using the Internet to reduce the costs of their inputs, exchange inventory information with crucial suppliers in real time with minimal administrative and transaction costs, and seek out new market opportunities.

exponential growth of Internet usage itself makes inefficient policies dangerous: what appears to be a reasonable subsidy today will quickly become unreasonable if not checked.

3. To date, the emergence and growth of the Internet has been aided by two subsidies—one express and one implicit. First, although Internet calls give rise to local exchange switching and transmission costs for incumbent local exchange carriers ("ILECs"), Internet Service Providers ("ISPs") are largely exempt from paying ILECs for those costs. Through the Enhanced Service Provider ("ESP") exemption, ISPs are excused from paying the access charges ordinarily assessed on carriers of long distance traffic. As a result, ILECs may not charge ISPs for their use of the local exchange to carry what are effectively interstate calls from the premises of ISP customers to the ISP locations.[3] This exemption creates a subsidy in favor of ISPs at the expense of the ILECs and CLECs that carry the calls placed by the ISPs' customers. And, ILECs and CLECs do not shoulder the burden evenly: in lieu of access charges, CLECs are permitted to collect regular business service rates from the ISPs they serve, while the ILECs that originate the bulk of those calls collect nothing from the ISPs.[4]

4. The ESP exemption has led to a second, albeit implicit, subsidy. In the absence of a regulatory scheme for compensating carriers for carrying ISP-bound traffic -- the ESP exemption makes the access charge regime unavailable -- many states have applied the reciprocal compensation scheme as the model for compensation. In so doing, they have applied the same rates in assessing payments for ISP-bound traffic as those used for traditional voice traffic. As we describe below, this causes ILECs originating ISP-bound calls to pay more for the carriage of those calls than such carriage costs—essentially creating windfall profits for the CLECs that serve ISPs and, by extension, allowing the CLECs to subsidize the ISPs and the ISPs' customers for Internet access.

5. In this paper, we apply economic principles to show that the appropriate form of intercarrier compensation for such traffic is not reciprocal compensation. The practical effect of the

[3] FCC, *In Re: MTS and WATS Market Structure*, CC Docket No. 78-72, Memorandum Opinion and Order ("MTS/WATS Order"), 1983.

[4] Of course, where the ILEC serves the ISP, it, too, can collect the basic business service charge.

ESP exemption has been an intercarrier compensation scheme that jeopardizes the efficient development of local exchange competition (and, to the extent that infrastructure is harmed, the continued growth of the Internet itself) and presents obstacles to more efficient intercarrier compensation schemes.

6. If, however, the Commission determines that reciprocal compensation is the required mechanism for intercarrier compensation for ISP-bound traffic, we also show that the prices which are charged for such calls should not be the same as those used for traditional voice traffic. Use of voice-based rates for ISP-bound traffic results in gross overpayments by ILECs to CLECs serving ISPs. This, in turn, creates perverse economic incentives for CLECs to serve ISPs and to shun residential customers as well as to generate customers and traffic artificially for the purpose of collecting reciprocal compensation payments.

7. Our analysis and conclusions in this paper are based on an examination of current regulatory and policy initiatives and of how carriers that jointly provision access to an ISP would be compensated in unregulated competitive markets. Our major findings are as follows:

   - Persisting with the current reciprocal compensation scheme will generate an inefficient subsidy for Internet use, distort the local exchange market and generate harmful arbitrage opportunities for CLECs. These include incentives for CLECs to generate sham customers and traffic and to specialize in serving ISPs in order to receive reciprocal compensation revenues.

   - Costs incurred in carrying ISP-bound traffic are lower than those incurred in carrying traditional voice traffic. Because the reciprocal compensation scheme does not take this into account, ILECs are paying CLECs for carrying calls to ISPs at rates that exceed the cost CLECs incur in carrying the calls, and the costs avoided by the ILECs in having the calls carried by the CLECs.

8. In Section II, we address the ESP exemption and analyze the inefficiencies it creates by barring LECs from recovering the costs of ISP-bound traffic directly from the ISPs or their customers. In Section III, we assume that reciprocal compensation will apply to ISP-bound traffic and analyze the harm to efficiency and the distortion of local exchange competition that result from applying rates and a rate structure suited for traditional voice traffic to the payment of reciprocal compensation for ISP-bound traffic.

II. ALLOWING ILECS TO RECOVER THEIR COSTS OF ORIGINATING ISP-BOUND TRAFFIC FROM THE ISPS THEMSELVES WOULD BE ECONOMICALLY EFFICIENT.

9. Cost causation is a fundamental economic principle that should inform any analysis of pricing and cost recovery. The principle asks two questions: (1) who or what has caused the cost in question (cost source)? and (2) how much is the cost in question (level of cost recovery)? Once the person or activity that gives rise to a cost has been identified, the amount of cost in question is recovered entirely from that source.

10. Consumers determine what and how much to buy on the basis of prices they pay. Their act of buying also causes costs. To ensure that society's scarce resources are put to their best use and that only the goods and services of highest value to society are produced and consumed, consumers (cost-causers) must be made to pay prices that fully reflect the costs they cause. Application of the cost causation principle thus leads to prices that fully recover costs and, at the same time, ensure that consumption occurs—and resources are used—efficiently.

11. We can use the principle of cost causation to gain a better understanding of the problem at hand. Suppose customer Jane is a U S WEST subscriber for local service and an AOL customer for Internet traffic. Suppose further that AOL obtains access service from a CLEC. When Jane places an Internet-bound call, what costs are incurred and what revenue sources are available to cover those costs? Switching and transmission costs are straightforward: U S WEST carries the call from Jane's computer to U S WEST's point of connection with the CLEC, the CLEC carries the call to AOL, and AOL performs protocol conversion and sends the call out into the Internet. At present, revenue to cover these costs comes from four sources: Jane pays U S WEST a regulated price for residential local exchange service and pays AOL a competitively-determined price for ISP services. AOL pays the CLEC a price for network access service that is limited by the FCC's ESP exemption from including interstate carrier access charges. And, U S WEST pays reciprocal compensation to the CLEC.

12. The principle of cost causation implies that, *for the purposes of an Internet call*, Jane is properly viewed as an AOL customer placing an Internet-bound call, not a U S WEST customer placing a local call. Although the portion of her Internet call that lies entirely within the circuit-switched network, i.e., up to AOL, *resembles* a local call, its economic function is very different, since AOL is not simply a passive end-user recipient of her call. Rather, AOL designs, markets and sells Jane the service, collects her monthly fee for Internet access, answers her questions, establishes telephone numbers at which she can access its services without paying toll charges, and pays the CLEC for access to the public switched telephone network. Moreover, AOL performs standard carrier functions such as transport and routing, as well as maintains leased facilities within the backbone network. U S WEST and the CLEC simply provide access-like functions to help the Internet call on its way, just as they might provide originating or terminating carrier access to help an inter-exchange carrier ("IXC") carry an interstate long distance call.

13. By contrast, when a U S WEST subscriber places a local call that terminates to a CLEC subscriber, what functions does U S WEST perform? Obviously, it originates the call by providing dialtone, local switching, and transport to the CLEC's point of interconnection. In addition, U S WEST markets the service to its subscriber (and customer of local calls) and determines both the level and structure of the price and other terms and conditions under which the customer decides to place the call. U S WEST determines if the call has been completed, bills and collects from the customer for the call (if measured service applies) or for flat-rate service, and answers questions regarding the bill or the service. The story is precisely symmetric if the originating party is a CLEC customer and U S WEST or another CLEC terminates the call.

14. Consequently, the same subscriber can act both (1) in the capacity of a customer of the originating ILEC when making a local voice call, and (2) in the capacity of a customer of the ISP when making an Internet call. This situation is not an unfamiliar one: it is exactly analogous to the subscriber acting in the capacity of a customer of an IXC when making a long distance call. Like the ISP, the IXC acts as its customer's agent in assembling the necessary components of the customer's call. When a U S WEST subscriber places a long distance call using, e.g., AT&T, U S WEST's function is limited to recognizing the carrier

code (or implementing presubscription in its switch) and switching and transporting the call to AT&T's point of presence. While, at some level, the functions its network performs are similar to those used to deliver local traffic to a CLEC,[5] the economic functions are very different. It is AT&T that markets the service to its customer and determines both the level and structure of the price and other terms and conditions of the call. AT&T sends, explains, and collects the bill from the customer or loses the revenue if it cannot. Thus, under this model of cost recovery—the ILEC-IXC model of interconnection—the originating subscriber is, from an economic perspective, the customer of the IXC, not of the originating ILEC.

15. For these reasons, under an economically efficient system of compensation, the ILEC would not be required to pay reciprocal compensation to a CLEC for Internet calls made by the ILEC's subscribers. Instead, the ISP—as the agent of the cost-causer—would pay the ILEC (and the CLEC that also serves it) usage charges analogous to carrier access charges paid by IXCs, i.e., the ILEC-IXC interconnection regime would apply. Only such a payment would close the gap between the full cost of the call up to the ISP and the local call charge that is assessed on the end-user by the originating ILEC. By recovering the full cost of the Internet call from its customer (the cost-causer), the ISP will no longer depend on a subsidy from the serving CLEC to defray its costs. Without windfall profits from reciprocal compensation, the CLEC will have no incentive or opportunity to subsidize its local service to the ISP; instead, it (and the originating ILEC) will be assured recovery of its costs to handle the Internet call because the ISP's customer will be paying for the full cost of that call. The salient characteristic of this economically correct form of intercarrier compensation is that the CLEC that switches Internet calls for the ISP is compensated, not from reciprocal compensation paid by the originating ILEC, but from charges paid by the ISP.

[5] U S WEST supplies the customer's loop and provides dialtone, local switching, and transport to AT&T's point of presence.

III. BASING RECIPROCAL COMPENSATION FOR ISP-BOUND TRAFFIC ON RATES CREATED FOR VOICE TRAFFIC HARMS ECONOMIC EFFICIENCY AND DISTORTS LOCAL EXCHANGE COMPETITION.

16. We begin the analysis in this section by showing that the per-minute costs incurred to carry an ISP-bound call are less than the costs incurred to carry the average voice call. We then show that requiring ILECs to pay reciprocal compensation for such calls without adjusting the rates to reflect the difference in costs results in a higher-than-necessary cost liability for ILECs, and a windfall for CLECs. Since competitive market forces will funnel at least some of the excess compensation CLECs receive from the ILECs to the CLECs' ISP customers, the *net* price ISPs pay for such traffic must be *below* the costs imposed by such calls. Thus ISP traffic receives a subsidy, which as competition among ISPs oblige them to pass on part or all of their cost "savings" to their Internet access customers, the subsidy is propagated forward to those Internet customers as well.

A. Structure of Costs: ISP-Bound Traffic is Not as Costly as Voice Traffic.

17. The per-minute costs incurred in transporting an ISP-bound call are smaller than those incurred in carrying traditional voice calls, for several reasons. First, for every call, there are broadly two types of cost: a *fixed* cost (invariant to the length of the call) for call setup at both ends of the call, and an *incremental* or variable cost that arises for every minute a call passes through a switch.[6] The full *per minute* cost of that call is the sum of the incremental cost of that minute plus the fixed cost averaged over the total length of the call. The latter component would obviously diminish as the fixed cost is averaged over an increasing number of minutes. Thus, if the average ISP-bound call were between five and seven times longer than the average voice call,[7] the average *fixed* cost component for the former would be considerably smaller than that for the latter. *Even if* the incremental cost

[6] It is of some interest whether that incremental cost itself declines, stays constant, or rises with the length of the call. However, we do not get into that issue here.

[7] See, e.g., Kevin Werbach, "Digital Tornado: The Internet and Telecommunications Policy," *OPP Working Paper Series No. 29*, Federal Communications Commission, March 1997, p. 59, Figure 9.

component of both types of calls were the same, the *per minute* cost of the average ISP-bound call would still end up being considerably less than that for the average voice call. A simple numerical example illustrates this fact.

18. Suppose the incremental cost for each minute is 0.5¢. Then, a 3-minute call would have a total incremental cost of 3×0.5 = 1.5¢ and a 20-minute call would have a total incremental cost of 20×0.5 = 10¢. Suppose the fixed cost of call setup—which does not vary with the length of the call—is 2¢. Then the *total* cost of the 3-minute call (inclusive of call setup) would be 1.5+2 = 3.5¢, and that for the 20-minute call would be 10+2 = 12¢. To figure what each call costs on a per-minute basis, simply divide the total cost of each by the respective number of minutes. Thus, the 3-minute call would cost 3.5÷3 = 1.66¢ per minute and the 20-minute call would cost 12÷10 = 1.2¢ per minute. That is, as the call duration increases, the cost per minute would fall.

19. In addition, the incremental cost for the two types of calls may differ. The incremental cost of the local call is normally the basis for an ILEC's termination rate. Yet that rate is itself a composite that reflects how the cost of local calls varies among different types of customers and customer locations. Unlike CLECs, ILECs must be prepared to provide local service to any or all such customers, regardless of their usage or location. In contrast, the incremental cost of an ISP-bound call does *not* reflect such a composite. ISPs can place their equipment in high-density, central business locations and frequently can collocate equipment in the CLEC's switch. Transport costs for such calls will be lower than for an average of all traffic terminating within the local exchange.

20. As a result, the per-minute *incremental* cost of carrying traffic to particular end-users can vary a great deal, depending upon their location and the characteristics of the traffic. And, as explained earlier, because of average call durations, the *full* per-minute cost of carrying calls (inclusive of both incremental and fixed costs) is typically higher for averaged voice traffic than for ISP-bound traffic alone.

B. Applying Current Reciprocal Compensation Rates to ISP-Bound Traffic Distorts the Local Exchange Market.

21. When ILECs pay reciprocal compensation for ISP-bound traffic at rates created for traditional voice traffic, CLECs receive incremental revenues that, at the margin, exceed the incremental costs they incur in carrying the traffic. In addition, the amount the ILECs pay exceeds whatever costs they might save when CLECs carry that traffic on the ILECs' behalf. It should not be surprising that such compensation for ISP-bound traffic does not reflect costs. In many jurisdictions, compensation is based on the ILECs' forward-looking total element long run incremental cost ("TELRIC") of terminating traffic averaged over a wide range of end-users, services, and service locations. This has important implications for setting compensation for *ISP-bound calls* on the same basis.

22. When traffic between the ILEC and the CLEC is balanced,[8] the accuracy of TELRIC as the basis for reciprocal compensation is less material; any overpayment by an ILEC to transport traffic on the CLEC's network is offset by a corresponding overpayment by the CLEC to transport traffic on the ILEC's network. With balanced traffic, no individual ILEC or CLEC is either helped or handicapped in competing for retail local exchange customers by the requirement that interconnection compensation be based on TELRIC averaged over all customers. However, when traffic between the ILEC and the CLEC is grossly out of balance, e.g., when the CLEC transports traffic originated by the ILEC but returns little or no traffic to it, the accuracy of TELRIC-based compensation becomes critical.

23. Suppose, for simplicity, an ILEC's cost to deliver Internet traffic to an ISP that it serves is the same as the cost incurred by a specialized CLEC that serves a collocated ISP. That is, an ILEC's own cost for carrying for ISP-bound traffic is the same as the cost it avoids when a CLEC handles such traffic instead. If the ILEC is then required to pay reciprocal compensation for ISP-bound traffic at an averaged TELRIC-based rate that reflects *all* forms of local traffic, its total payment would necessarily be higher than if compensation levels were properly tied to the type—and, hence, the cost—of the traffic carried. This

[8] Traffic is said to be "balanced" when originating and terminating volumes are similar.

increase would not be offset by a similar increase in revenue from handling the CLEC's return traffic (because the CLEC does not originate any traffic). Thus, local exchange competition is distorted by the application of the averaged TELRIC to ISP-bound traffic; CLECs that primarily serve ISPs (and originate little or no traffic) receive revenues in excess of cost while ILECs (or even other CLECs) that serve all types of customers experience an increase in costs without a commensurate increase in revenues.

24. One end result of reciprocal compensation for ISP-bound traffic is a subsidy to Internet use. CLECs can share the windfall profits from reciprocal compensation with the ISPs they serve in one obvious way: by lowering their charges for the local exchange services purchased by ISPs (possibly below the charges the ISPs would face if they purchased the same services from ILECs instead).[9] Competitive pressure would then oblige those ISPs to pass on some or all of that subsidy to their customers for Internet access. This subsidy to Internet use within the circuit-switched network could only stimulate demand for Internet services inefficiently and further aggravate the ILECs' already tenuous position under the reciprocal compensation arrangement by making them pay ever-increasing amounts of such compensation to the CLECs. Additional negative consequences could be: (1) greater congestion at local switches engineered for voice traffic generally and, as a result, poorer quality of voice traffic, and (2) CLECs making the opportunistic choice to specialize only in the delivery of ISP-bound traffic.

C. Distortion of the Market Creates Perverse Incentives.

25. Requiring the payment of a reciprocal compensation price for ISP-bound traffic that exceeds actual costs creates a number of perverse incentives. First, CLECs have an incentive to *avoid* competing to serve customers who originate such traffic. As most switched ISP-bound traffic comes from residential users, the incentives to compete to serve residential users are artificially diminished. A residential customer that dials up the Internet

[9] Some CLECs insist that they do not discount services to ISPs, they merely charge ISPs the competitive market price. However, competitive forces in the market for ISP access services will reduce the market price for ISP access to reflect the incremental revenue from reciprocal compensation, effectively passing through reciprocal compensation payments to ISPs and their customers.

two hours a day (60 hours per month) would generate 3,600 minutes of reciprocal compensation: at a penny a minute, $36 per month in reciprocal compensation payments would likely exceed the LEC's revenue from supplying basic exchange service. At 0.1 cents per minute, reciprocal compensation would have a larger financial impact ($3.60 per month) on local exchange economics than the FCC's subscriber line charges.

26. Conversely, under an unadjusted reciprocal compensation scheme, the incentives for CLECs to specialize in carrying ISP-bound traffic are artificially increased. Suppose, for example, an ILEC serves 95 percent of the residential local exchange traffic in a market. If an ISP obtained local business service from the ILEC, only 5 percent of its incoming Internet-bound traffic (generated by subscribers of one or more CLECs) would generate reciprocal compensation payments. If it signed up with a CLEC instead, 95 percent of its incoming Internet-bound traffic would generate such payments. When the reciprocal compensation price exceeds CLECs' cost to handle the traffic, and CLECs are able to transfer some of this windfall to the ISPs they serve, the ISPs have a strong financial incentive to seek incoming Internet-bound traffic from CLECs as opposed to ILECs. By encouraging a greater trend toward CLEC-ISP alliances for collecting reciprocal compensation revenues for ISP-bound traffic, this creates a further distortion in the local exchange market.

27. This scheme also gives CLECs and ISPs an incentive to encourage end users to maximize their time online. For example, a CLEC's profits increase whenever an ILEC subscriber—or her computer—can be induced to call the ISP and remain on the line 24 hours a day.[10] One egregious example of such abuse of the reciprocal compensation arrangement surfaced recently in North Carolina. In litigation currently before North Carolina regulators, BellSouth (the ILEC in this case) has identified a scheme planned and executed by US LEC of North Carolina, LLC ("US LEC") to generate vast amounts of reciprocal compensation

[10] Dedicated (private line) connections that bypass the public switched network are most efficient for customers desiring "always-on" or 24 hour connectivity. Despite this fact, such connectivity is sometimes offered in a manner that involves traffic origination through an ILEC's switch and termination through an ISP-serving CLEC's switch. This arrangement is clearly less interested in efficiency or the best use of valuable network resources than it is in generating the maximum possible revenue from reciprocal compensation.

payments from BellSouth.[11] According to BellSouth's complaint, US LEC created a sham network that, in effect, established perpetually open or "nailed up" connections between BellSouth's network and US LEC's network through their respective local switches in order to generate reciprocal compensation for 23 hours and 59 minutes a day.[12] To this end, US LEC allegedly recruited Metacomm, Inc. to serve as a BellSouth "customer" (although it functioned more as a carrier than as an end-user) and to arrange for those connections to be made and held open. In return, US LEC allegedly promised Metacomm a 40% share of the reciprocal compensation revenues earned from BellSouth under this arrangement (an allegation that neither US LEC nor Metacomm has denied). BellSouth currently estimates that this alleged effort to exploit the reciprocal compensation arrangement has generated nearly $150 million for the US LEC-Metacomm partnership, although BellSouth has refused to pay that amount, pending a decision on its complaint.

28. Abuses of reciprocal compensation can be particularly acute for long duration calls (typically data calls or calls to Internet destinations) and particularly profitable for CLECs unconstrained by regulatory requirements or franchise obligations to serve as carriers of last resort. The profit available from such abuse may not be in the interest of society at large, but reflects rational *private* economic behavior by entities facing perverse incentives. The scale of the damage from such abuse exceeds just the compensation amounts transferred by the ILEC to the CLEC. It also includes the loss of technical efficiency that comes from imposing congestion and other costs on ILECs whose circuit-switched networks were not initially designed to handle long duration and exclusively data calls. In addition, such abuse rewards CLECs for imposing inefficiencies on the circuit-switched network and, thus, reinforces the perverse incentives.

29. At least two states have recognized the perverse incentives created by reciprocal compensation for ISP-bound traffic. First, in reversing its decision to permit such compensation, Massachusetts declared that the unqualified payment of reciprocal

[11] North Carolina Utilities Commission, *In the Matter of BellSouth Telecommunications, Inc., Complainant, v. US LEC of North Carolina, LLC, Respondent*, Docket No. P-561, Sub 10.

[12] Details of the complaint may be found in BellSouth's *Post-Hearing Brief* in Docket No. P-561, Sub 10.

compensation for ISP-bound traffic was antithetical to real competition in telecommunications:

> The unqualified payment of reciprocal compensation for ISP-bound traffic, implicit in our October Order's construing of the 1996 Act, does not promote real competition in telecommunications. Rather, it enriches competitive local exchange carriers, Internet service providers, and Internet users at the expense of telephone customers or shareholders. This is done under the guise of what purports to be competition, but is really just an unintended arbitrage opportunity derived from regulations that were designed to promote real competition. A loophole, in a word. ... But regulatory policy ... ought not to create such loopholes or, once having recognized their effects, ought not leave them open.
>
> Real competition is more than just shifting dollars from one person's pocket to another's. And it is even more than the mere act of some customers' choosing between contending carriers. Real competition is not an outcome in itself—it is a means to an end. The "end" in this case is *economic efficiency* ... Failure by an economic regulatory agency to insist on true competition and economic efficiency in the use of society's resources is tantamount to countenancing and, to some degree, encouraging waste of those resources. Clearly, continuing to *require* payment of reciprocal compensation ... is not an opportunity to promote the general welfare. It is an opportunity only to promote the welfare of certain CLECs, ISPs, and their customers, at the expense of Bell Atlantic's telephone customers and shareholders.[13]

30. Second, in a recent decision on an interconnection arbitration in their state, Louisiana regulators denied the payment of reciprocal compensation for ISP-bound traffic and noted:

> [BellSouth] put forth evidence that it would not have agreed to pay reciprocal compensation for ISP traffic because such an arrangement would have certainly resulted in economic harm to [BellSouth]. Given that CLECs such as KMC primarily, if not exclusively, serve business customers including ISPs, while [BellSouth] serves the vast majority of Internet end-users, paying reciprocal compensation on ISP traffic would result in absurd amounts of reciprocal compensation flowing to the CLECs. Indeed, in this particular case, KMC billed [BellSouth] reciprocal compensation for ISP traffic that was approximately 340% more than KMC received in revenue from providing actual service to its ten (10) ISP customers in Louisiana. ... The negative impact on

[13] Massachusetts Department of Telecommunications and Energy ("DTE"), *Complaint of MCI WorldCom, Inc., Against New England Telephone and Telegraph Company d/b/a Bell Atlantic-Massachusetts for Breach of Interconnection Terms Entered Into Under Sections 251 and 252 of the Telecommunications Act of 1996*, Docket No. 97-116-C, Order ("Massachusetts ISP Compensation Order"), May 1999. Emphasis added (in part) and in original (in part).

> competition in the local market as well as the potential for abusing the reciprocal compensation obligation from permitting such an arrangement are obvious.[14]

Evidence that reciprocal compensation payments exceed CLECs' costs of handling the traffic could not be more clear. Non-traffic sensitive loop costs for telephone companies average about 80 percent of total costs, while the traffic-sensitive costs for switching and transport make up the remaining 20 percent.[15] If reciprocal compensation payments roughly covered the costs of handling the traffic, we would thus expect cost-based reciprocal compensation revenues to average about a quarter of the competitive-market based revenues from supplying loops. Instead, in Louisiana, we find that reciprocal compensation obligations—ostensibly to recover the traffic sensitive switching and transport costs to terminate traffic—more than triple the revenue from non-traffic sensitive local exchange rates.[16]

31. Finally, as a percentage of total revenues, reciprocal compensation payments range as high as 84 percent for US LEC or 71 percent for Focal[17] while other CLECs currently have different business plans in which reciprocal compensation amounts to 4.1 percent of revenue for Time Warner and 1.5 percent for GST.[18] Irrespective of individual CLEC's intentions, market forces will ensure that reciprocal compensation payments will be reflected in market-determined prices that ISPs pay for access to the local exchange.

32. The FCC has taken explicit note of the fact that arbitrage opportunities arise when compensation rates are out of line with transport costs. In the context of paging, the FCC

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[14] Louisiana Public Service Commission, *In Re: Petition of KMC Telecom, Inc. Against BST to Enforce Reciprocal Compensation Provisions of the Parties' Interconnection Agreement*, Docket No. U-23839, Order, October 13, 1999,at 20-21.

[15] This approximate 80/20 split of costs can be observed in ARMIS data for regulated ILECs and in ratios from the Benchmark Cost Proxy Model for forward-looking economic costs.

[16] "KMC generated approximately $636,427 in revenue from providing service to its ten Louisiana ISP customers during the same time period that it billed BST $2,160,985 in reciprocal compensation for traffic to those ten ISP customers." Louisiana Public Service Commission, Order No. U-23839, *KMC Telecom v. BellSouth Telecommunications, Inc.*, October 13, 1999, Factual Finding No. 13.

[17] Telco Business Report, Vol 16, No. 16, August 2, 1999 at 2.

[18] Duff & Phelps Credit Rating Co., "An Overview of the CLEC Industry," November 1999, at 3.

has recognized the possibility of arbitrage and declined to use the ILEC's TELRIC termination costs as a proxy for those of the CLEC:

> Using incumbent LEC's costs for termination of traffic as a proxy for paging providers' costs, when the LECs' costs are likely higher than paging providers' costs, might create uneconomic incentives for paging providers to generate traffic simply in order to receive termination compensation.[19]

Instead, the FCC has required separate cost studies to justify a cost-based rate which the FCC explicitly expects would be lower than the wireline ILECs' TELRIC-based rate. Note that the paging case also involves one-way calling; like ISPs, paging companies do not originate traffic. More recently, the FCC has acknowledged that:

> efficient rates for inter-carrier compensation for ISP-bound traffic are not likely to be based entirely on minute-of-use pricing structures. In particular, pure minute-of-use pricing structures are not likely to reflect accurately how costs are incurred for delivering ISP-bound traffic.[20]

33. This is clear recognition of the fact that TELRIC-based rates are fundamentally unsound for intercarrier compensation for ISP-bound traffic. Echoing this sentiment, Massachusetts regulators stated flatly that:

> The revenues generated by reciprocal compensation for ... incoming traffic are most likely in excess of the cost of sending such traffic to ISPs. ... Not surprisingly, ISPs view themselves as beneficiaries of this "competition" and argue fervently in favor of maintaining reciprocal compensation for ISP-bound traffic. However, the benefits gained, through this regulatory distortion, by CLECs, ISPs, and their customers do not make society as a whole better off, because they come artificially at the expense of others.[21]

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[19] FCC, *In the Matter of Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order ("Local Competition Order"), released August 19, 1996, ¶1093.

[20] FCC, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* and *Inter-Carrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98 and 99-68, Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68, released February 26, 1999, ¶29.

[21] Massachusetts ISP Compensation Order. Emphasis added.

IV. CONCLUSIONS

34. A policy for intercarrier compensation for ISP-bound traffic requires specifying who pays what to whom to cover the costs caused by dialup Internet traffic. We have shown that the cost-causer is the end user acting as a customer of the ISP. Therefore, like the IXC that pays carrier access charges to defray the cost of originating or terminating a long distance call, the ISP should pay analogous charges to defray costs incurred by other carriers on its behalf to switch an ISP-bound call. Doing so would ensure that the cost causer would face a price that reflects the entire cost his actions create. Persisting with reciprocal compensation (from the ISP customer's originating ILEC to the CLEC that ultimately switches the call to the ISP) would generate an inefficient subsidy for Internet use, distort the local exchange market, and generate unintended arbitrage opportunities for CLECs.

35. In addition, we have shown why requiring ILECs to pay reciprocal compensation for ISP-bound traffic at the same rates at which they pay for the transport and termination of traditional voice calls is inconsistent with economic efficiency and jeopardizes the development of local exchange competition and the continued growth of the Internet. The per-minute costs incurred in carrying ISP-bound calls are lower than those incurred for voice traffic. The current reciprocal compensation scheme does not, however, account for these differences. As a result, ILECs pay CLECs for carrying calls to ISPs at rates that exceed both the cost CLECs incur in carrying the calls and the costs avoided by the ILECs in having the calls carried by the CLECs.

36. In the long run, only policies that are consistent with economic efficiency provide the opportunity to achieve lower costs, lower prices, and new and innovative services. The current application of reciprocal compensation for ISP-traffic merely shifts revenues from one pocket to another but does practically nothing to improve the efficiency of the market. In fact, by creating perverse opportunities for CLECs to specialize in serving ISPs with the sole aim of accumulating reciprocal compensation revenues, it succeeds only in reducing economic welfare.

1020 Nineteenth Street NW
Suite 700
Washington, DC 20036
303 672-5839
fax: 202 296-5157

John W. Kure
Executive Director - Federal Regulatory

Qwest

Ex Parte

October 26, 2000

Magalie Roman Salas, Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

Re: CC Docket Nos. 96-98 and 99-68
Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Inter-Carrier Compensation for ISP-Bound Traffic

Dear Ms. Roman Salas:

On October 25, 2000, the undersigned met with Kyle Dixon, legal advisor to Commissioner Powell and on October 26, 2000, Dr. William Taylor of NERA, Robert McKenna of Qwest and the undersigned met with Anna Gomez, legal advisor to the Chairman; Deena Shetler, legal advisor to Commissioner Tristani; Rebecca Beynon, legal advisor to Commissioner Furchtgott-Roth; and Jordan Goldstein, legal advisor to Commissioner Ness. During these meetings, the views of Dr. Taylor and Qwest on the appropriate intercarrier compensation for ISP-bound traffic were presented. Qwest and Dr. Taylor believe that the appropriate public policy for this traffic between an ILEC and a CLEC is 'bill and keep' as noted on the attached material used during the meetings. Also attached is a copy of the "Efficient Inter-Carrier Compensation for Internet-Bound Traffic: Reply to Time Warner Telecom" written by Dr. Taylor and Dr. Banerjee which also address this subject. In addition, attached are the Arizona and Colorado orders which set 'bill and keep' for ISP-bound traffic.

In accordance with Section 1.1206(b)(2) of the FCC's Rules, an original and two copies of this letter are being filed with your office for inclusion in the public record.

Acknowledgment and date of receipt of this submission are requested. A duplicate of this letter is provided for this purpose. Please call if you have any questions.

Sincerely,

Attachments
cc: Kyle Dixon, Rebecca Beynon, Deena Shetler, Jordan Goldstein, Anna Gomez, Tamara Preiss

Reciprocal Compensation for ISP-Bound Traffic CC Dkt. Nos. 96-98 and 99-68

Ex parte
October 25 and 26, 2000

Robert McKenna and John Kure,
Qwest Corporation

and

Dr. William E. Taylor, Senior Vice President,
National Economic Research Associates, Inc. (NERA)

Bill and Keep is the Appropriate Compensation Paradigm for Internet-Bound Traffic (Dr. Taylor)

- Cost causation is the proper economic basis for selecting the form of compensation for Internet-bound traffic.

- Based on cost causation, Internet-bound traffic resembles long distance traffic more than local voice traffic.

- The cost causer, the ISP's customer for Internet access, and the cost-causer's agent, the ISP itself, should be responsible for compensating both the ILEC and the CLEC.

- Because of the ESP exemption, the next best compensation policy is Bill & Keep.

- Reciprocal compensation at a positive rate for Internet-bound traffic is economically inefficient, distorts local exchange competition, and creates incentives for uneconomic arbitrage.

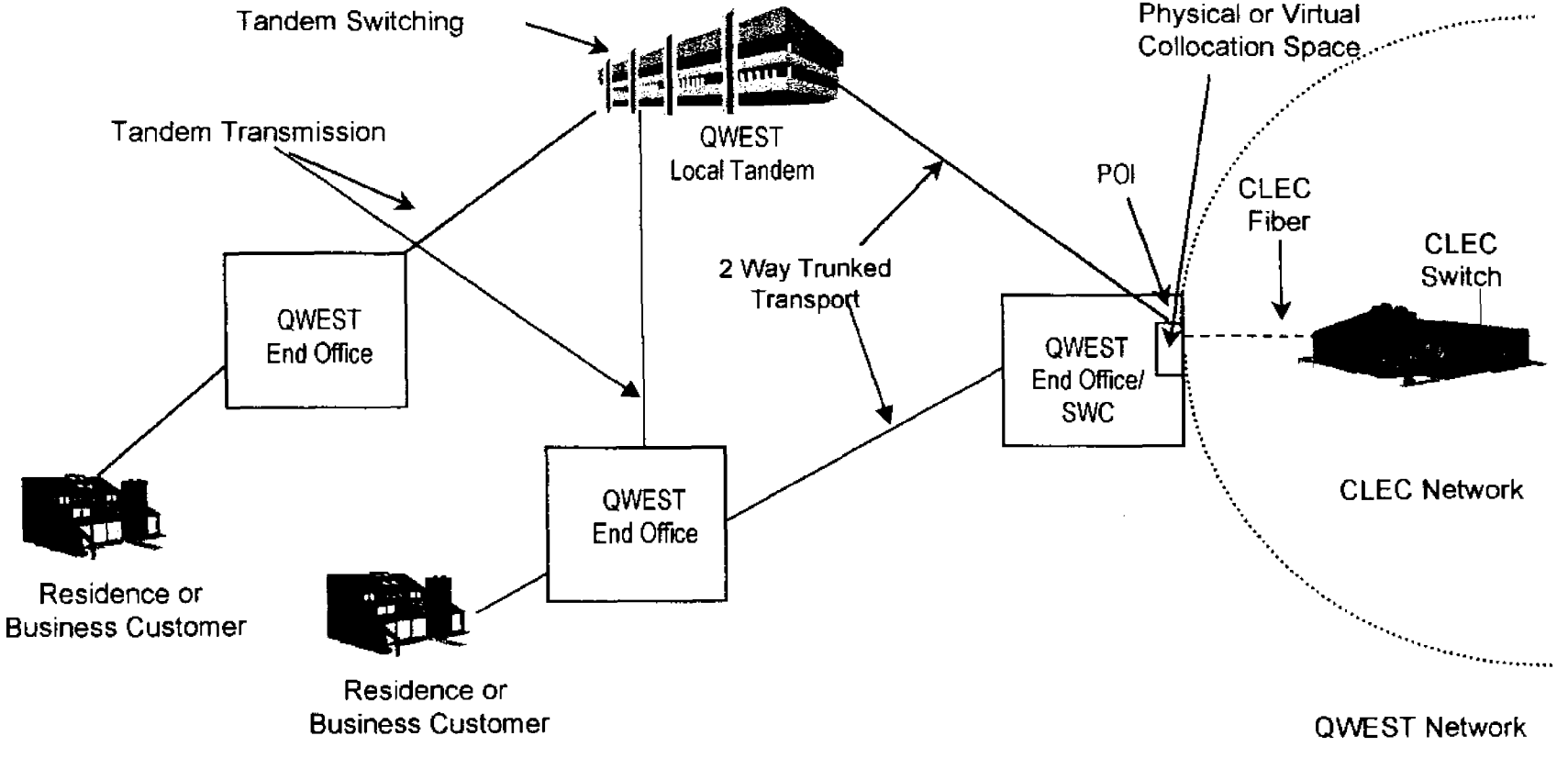
- Current policy of reciprocal compensation at a positive rate should be ended for Internet-bound traffic.

Over time, Qwest's Cost Advocacy for Switching Has Not Changed, in Spite of Increasing Net Reciprocal Compensation Payments to CLECs

State	Filed Study Date	Filed TELRIC + Common Cost	State Ordered Internet Reciprocal Compensation?	Ordered Rate (Arbitrated if no Cost Docket)
• **Oregon**	08/01/1996	$ 0.002880	Yes	$ 0.001330
• **Nebraska**	08/01/1996	$ 0.003082	Yes	$ 0.003682
• **Washington**	08/01/1996	$ 0.002671	Yes	$ 0.001200
• **Montana**	09/01/1996	$ 0.003655	No Decision	$ 0.002900
• **New Mexico**	09/01/1996	$ 0.003013	Yes	$ 0.001108
• **North Dakota**	09/01/1996	$ 0.003302	No	$ 0.002500
• **Utah**			Yes	
– Urban	09/01/1996	$ 0.003298		$ 0.002299
– Suburban	09/01/1996	$ 0.003120		$ 0.002664
– Rural	09/01/1996	$ 0.004013		$ 0.002896
• **Colorado**	11/01/1996	$ 0.003083	No / Eff. May 2000	$ 0.002830
• **Idaho**	01/01/1997	$ 0.003421	No Decision	$ 0.002900
• **Arizona**	02/01/1997	$ 0.002947	No / Eff. June 2000	$ 0.002800
• **Minnesota**	03/01/1997	$ 0.003205	Yes	$ 0.001813
• **Iowa**	07/01/1997	$ 0.003237	No	$ 0.002130
• **Wyoming**	10/12/1998	$ 0.003753	No Decision	$ 0.003753
• **South Dakota**	03/04/1999	$ 0.003469	No	$ 0.003469

- The costs filed by QWEST are not influenced by whether a state orders reciprocal compensation on Internet traffic. Note that filed costs from 8/1/96 through 3/4/99 do not trend up or down over time.

The following diagram illustrates the trunking required to transport calls to a CLEC



ILECs are Incurring Huge Costs to Transport the ISP Traffic to the CLECs

- Since 1997, Qwest has incurred over $275 million in capital costs to install nearly 24,000 DS1 trunks serving CLECs and expects to spend well over $100M per year in the future.
- Qwest will be compensated for only a fraction (approximately one-ninth) of that cost because of the preponderance of ISP traffic going to CLECs.
- In addition to incurring the costs of constructing trunks, ILECs are paying huge amounts in reciprocal compensation to the CLECs.
- In the case where the ISP is connected via the ILEC, the ISP and the end user jointly cover these costs.
- In the case where the ISP is connected "behind" the CLEC, reciprocal compensation applies and the ISP pays nothing to recover these costs. This raises the costs which must ultimately be covered by the ILEC's end user.

Bill & Keep is Appropriate Policy

- Bill & Keep is the appropriate public policy for Internet-bound traffic.
- Transit traffic cannot be subject to Bill & Keep. This is traffic originated by one carrier which transits another carrier's network and terminates to yet another carrier. The carrier in the middle does not have an end-user to "bill" and should be compensated by the originating carrier.

NATIONAL ECONOMIC
RESEARCH ASSOCIATES
ONE MAIN STREET
CAMBRIDGE, MASSACHUSETTS 02142
TEL 617.621.0444 FAX 617.621.0336
INTERNET http://www.nera.com

n/e/r/a
Consulting Economists

EFFICIENT INTER-CARRIER COMPENSATION FOR INTERNET-BOUND TRAFFIC:

REPLY TO TIME WARNER TELECOM

William E. Taylor and Aniruddha Banerjee
National Economic Research Associates, Inc.
One Main Street
Cambridge, MA 02142

October 23, 2000

EFFICIENT INTER-CARRIER COMPENSATION FOR INTERNET-BOUND TRAFFIC: REPLY TO TIME WARNER TELECOM

I. INTRODUCTION

1. In an earlier paper, we presented an economic and policy analysis of alternative inter-carrier compensation mechanisms for Internet-bound traffic.[1] We applied economic principles to show that the appropriate form of inter-carrier compensation for such traffic is not reciprocal compensation. The principle of cost causation clearly implies that the customer-supplier relationship for Internet-bound traffic is similar to that for long distance traffic but not for local voice traffic. However, the inter-carrier compensation mechanism for Internet-bound traffic that is analogous to the access charge structure for long distance traffic is precluded by the current FCC exemption from access charges available to all enhanced service providers ("ESPs") including Internet service providers ("ISPs"). Unfortunately, reciprocal compensation for Internet-bound traffic—based on the model of interconnection for traditional local voice traffic—cannot be justified by the cost causation principle, and has several harmful economic effects. These include an inefficient subsidy for Internet use, distortion of local exchange competition, and uneconomic arbitrage opportunities for competitive local exchange carriers ("CLECs") that serve ISPs.

2. In a recent response to a similar paper authored by one of us,[2] Time Warner Telecom disputed many of our key findings and attempted to portray the choice as being solely between access charges and reciprocal compensation.[3] In his comments on behalf of Time

[1] William E. Taylor, Agustin Ros, and Aniruddha Banerjee, "An Economic and Policy Analysis of Efficient Intercarrier Compensation Mechanisms for ISP-Bound Traffic," December 1, 1999.

[2] Declaration of William E. Taylor ("Taylor Declaration"), on behalf of Verizon Communications, in FCC, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* (CC Docket No. 96-98) and *Inter-Carrier Compensation for ISP-Bound Traffic* (CC Docket No. 99-68).

[3] Reply Comments of Time Warner Telecom and Declaration of Don J. Wood ("Wood Comments") in FCC, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* (CC Docket No. 96-98) and *Inter-Carrier Compensation for ISP-Bound Traffic* (CC Docket No. 99-68), August 7, 2000.

Warner Telecom, Don J. Wood disagreed with the following three themes in the Taylor Declaration:

1. Cost-causative analysis of Internet-bound calls suggests that reciprocal compensation is inappropriate for such calls.

2. Internet-bound traffic is not as costly for a CLEC to deliver to an ISP as is local voice traffic.

3. Reciprocal compensation for Internet-bound traffic creates perverse incentives for behavior by CLECs and ISPs that harms economic efficiency.

In this paper, we respond to Mr. Wood's disagreement with us on those three themes. Specifically, we stand by our original analysis and demonstrate that Mr. Wood's own analysis is seriously flawed or deficient.

II. COST CAUSATION AND COMPENSATION FOR INTERNET-BOUND CALLS

3. Mr. Wood takes issue with the supposed assertion in the Taylor Declaration that "the flow of cost causation in a local telephone call is dependent in any way on the identity of the calling or called party." [Wood Comments, at 3] In advancing his own proposition that the identity of the calling and called parties do not matter for cost causation, Mr. Wood asserts that there is no real difference in the ultimate *incidence* of the cost of a local voice call, regardless of whether that call originates *and* terminates within the incumbent local exchange carrier's ("ILEC's") network, or originates within the ILEC's network but is handed off (under an interconnection agreement) for termination within a CLEC's network. Mr. Wood reasons that although, in the latter instance, the ILEC would avoid having to perform the termination *function* itself, it would not really avoid the cost of termination because of its interconnection obligation to compensate the CLEC for performing the termination on its behalf. The same logic would apply in reverse for calls made from within the CLEC's network to called parties either within that network or in the ILEC's network. Therefore, in Mr. Wood's view, the compensation liability always remains with the network serving the calling party and the size of the compensation is unchanged by whether the called party is on the same or some other network. According to Mr. Wood, this makes the identities of the calling and called parties and any customer-supplier

relationship irrelevant for determining who should pay whom and how much. [Wood Comments, at 5]

4. Extending his analysis to the case of Internet-bound traffic, Mr. Wood agrees that the ISP customer is the true cost-causer for an Internet-bound call, but disputes our position that the cost arises when the Internet user acts as a customer of the ISP. Instead, Mr. Wood argues, the cost is caused by the Internet user using her ILEC's network to place a call to an ISP that, in turn, provides access to the Internet. [Wood Comments, at 6] From this we surmise Mr. Wood's belief to be that, because the Internet user pays the ILEC to provide the means to contact the ISP, the ISP itself has no role in how or why the cost arises. This is also evident from Mr. Wood's claim that if the contractual relationship were truly between the Internet user and the ISP, then the ILEC would be obliged to disconnect that Internet user's telephone service any time the Internet user "failed to live up to [her] side of the contract and did not pay [her] bills to the ISP." [Wood Comments, at 6] Because this does not happen, Mr. Wood concludes that the contractual relationship relevant for cost causation is that between the Internet user and her ILEC, rather than between the Internet user and the ISP.

5. Mr. Wood also claims that the Taylor Declaration's description of the role of cost causation for Internet-bound calls suffers from the flaw of "under-inclusiveness." [Wood Comments, at 6-7] That is, Mr. Wood faults our alleged failure to consider all forms of commercial relationships that an ILEC subscriber could enter into beside that with an ISP, e.g., with brokerage firms, flower shops, banks with on-line service, pizza parlors, etc. Since Qwest or other ILECs have not argued in favor of eliminating reciprocal compensation for local calls from the ILEC subscriber to these other entities as well, there is an apparent selectivity in our singling out ISPs—and the CLECs that serve them—for denial of reciprocal compensation.

6. We disagree with all of these allegations by Mr. Wood of flaws in the economic logic of our position on cost causation and compensation for Internet-bound calls. The cost causation principle clearly distinguishes inter-carrier compensation for long distance calls from that for local calls and similarly distinguishs between the types of compensation that

are appropriate for local voice calls to end-users and calls to ISPs that provide Internet access functions to Internet users. We also believe that our exclusion of brokerage firms, pizza parlors, and the like from reciprocal compensation arrangements does *not* raise the specter of under-inclusion.

A. Contractual Relationships *Do* Matter for Determining Compensation Policy

7. The cost causation principle asks us to first identify the source of cost and then determine the amount of cost to be recovered. The first priority is, therefore, to locate the cost-causer or, in other words, the economic decision that gave rise to the cost. When an Internet user wishes to reach a web site or other destination on the Internet, she must first secure the services of the entity that is not only in a position to provide the pathway to the Internet but also actively markets those services through advertising and contractual terms and conditions concerning price, scope, quality, etc. The cost of the Internet-bound call—*wherever it may be generated*—would not arise were it not for the promise by the ISP to deliver Internet destinations to the Internet user and that user's voluntary acceptance of the ISP's terms and conditions for granting such access. In the absence of Internet access (i.e., the ISP's service), there would be no Internet-bound calls, and no cost would be caused for such calls. Therefore, the premise of cost causation *does* require us to look at how cost may arise in any instance and the contractual arrangement that governs the economic decision that gives rise to that cost.

8. The same may be observed to be true for other contractual relationships as well: that between the ILEC's subscriber and the ILEC for local voice calling (with the ILEC subscriber acting as a *customer* of the provider of local voice service) or that between the ILEC subscriber and the inter-exchange carrier ("IXC") for long distance calling (with the ILEC subscriber acting as a *customer* of the IXC for long distance service). Of course, the ILEC subscriber would have to use the ILEC's network to reach a CLEC (for cross-network local calls), an IXC (for long distance calls), and an ISP (for Internet calls). That is exactly how all or part of the cost of making those calls would arise in the first place. But, employing the cost causation principle in the manner suggested to determine how or why

cost arises does *not* amount to denying compensation where it is due. Indeed, cost causation helps us to sort through the following questions: (1) why did the cost arise (what economic decision caused the cost)? (2) where did the cost arise (what is the chain of economic activities that followed that decision)? and (3) how should the cost be recovered (how can the cost-causer and her agent be made to compensate all parties that incurred cost as a result of those economic activities)? Contrary to Mr. Wood's suggestion, we submit that the identity of the various parties in the contractual relationship *is* fundamental for determining where compensation is due and from whom.

9. Clearly, the ILEC subscriber must use intermediaries (such as the ILEC's and sometimes a CLEC's network) to reach her agent (an IXC for long distance calls and an ISP for Internet calls). In all instances, those intermediaries, as passive participants in the process, incur costs for which they should be compensated. For long distance calls, the IXC—the cost-causer's agent—compensates the ILEC (or CLEC) for incurring costs at both the originating and terminating ends of those calls *and* recovers that compensation in the long distance service rates it charges its cost-causing customer. The exact same story applies, or should apply, to Internet calls for which the ISP—the cost-causer's agent—must compensate the ILEC (and/or CLEC) for incurring costs to deliver those calls. Analogously to the IXC, the ISP should then recover that compensation in its Internet access service rates to the cost-causing customer. In sharp contrast to Mr. Wood's supposed application of the cost causation principle, this demonstrates why it is important to first establish the identities of the cost-causer, the cost-causer's agent, and other intermediaries who passively incur cost before determining how compensation should be paid and to whom. To do otherwise (as Mr. Wood's analysis suggests) would be to ignore cost causation itself.

B. There is *No* Problem of Under-Inclusion if the Status of Called Parties is Correctly Identified

10. The alleged problem of under-inclusion (or selectivity) in determining compensation policy is entirely a figment of Mr. Wood's own incomplete analysis. Mr. Wood asks why reciprocal compensation should apply to various entities (like brokerage firms, pizza parlors, etc.) with which the ILEC subscriber can have a commercial relationship over the

telephone network but not to CLECs serving ISPs. The obvious answer is that every entity listed by Mr. Wood as the called party is an "end-user" (in the commonly understood sense of the term), but an ISP is not. Local calls made between end-users qualify for reciprocal compensation under state and federal policies, but not so calls from an end-user and a carrier. Our position has consistently been that the ISP performs the economic functions of a carrier, not an end-user or the passive recipient of a call. The ISP maintains a gateway into the circuit-switched network on one side and the packet-switched network on the other and, on occasion, even integrates itself into one or the other network (e.g., when the ISP becomes its own CLEC or owns and operates its own assets in the Internet backbone). The ISP also acts like a carrier by transporting Internet calls, performing protocol conversions, and carrying out other carrier functions. Regulators have also recognized this difference from true end-users, sometimes explicitly.[4]

11. Could the relationship between an ILEC subscriber and a pizza parlor or a bank with on-line service be a commercial contract in the same sense as that between that subscriber and an ISP? The answer is a qualified "yes." Like the ISP, the pizza parlor or the bank offers its services over the telephone (although, unlike the ISP, it also has non-network means for selling its services). However, there are also some important differences. First, the pizza parlor or the bank does not perform the carrier-like functions of an ISP to provide access to some other party (such as a web server or Internet destination). Rather, the pizza parlor and the bank provide internal access into their own operations, in much the same way that *any* end-user may be said to provide "access" to herself when a call comes in. Second, the relationship between the ILEC subscriber and the pizza parlor or bank is truly reciprocal, as it is supposed to be between two end-users. That is, the pizza parlor or bank can

[4] For example, in becoming the fourth state regulatory agency to deny reciprocal compensation for Internet-bound traffic, the Louisiana Public Service Commission stated:

> There is no prevailing industry custom of treating ISP traffic as "local" for reciprocal compensation purposes. FCC regulations require that ISPs be treated as end users *for only one purpose, the access charge exemption.*

Louisiana Public Service Commission. *In re Petition of KMC Telecom, Inc. Against BST to Enforce Reciprocal Compensation Provisions of the Parties' Interconnection Agreement*, Order in Docket No. U23839, October 13, 1999, at 13.

independently call the ILEC subscriber, i.e., on a separate call from that made by that subscriber to the pizza parlor or bank. An ISP, in contrast, serves merely as an Internet access-granting agent to the ILEC subscriber and has no commercial interest in returning separately any calls to that ILEC subscriber. In both of these respects, the role of the ISP is strikingly similar to that of an IXC. Unlike the pizza parlor or bank, an IXC too performs the functions of a carrier and has no commercial interest in returning separately any calls to the ILEC subscriber. These differences bear powerful witness to the fact that mere *resemblance* between cross-network local voice calls and Internet-bound calls (up to the ISP) is not enough for both to merit the same compensation mechanism. Without belaboring the point unnecessarily, cost causation *does* matter.

III. INTERNET-BOUND TRAFFIC MAY NOT BE AS COSTLY AS LOCAL VOICE TRAFFIC

12. Mr. Wood questions the conclusion reached in the Taylor Declaration (and our earlier submission) that the cost per minute of an average-duration Internet-bound call is less than that for an average-duration local voice call. [Wood Comments, at 10-17] First, although he agrees with our position that, under the current rate structure, that difference in cost per minute may be true (because averaging of fixed call set-up costs over longer durations necessarily yields that result), he dismisses any further concern for it by proposing a two-part rate structure that would separate the recovery of the fixed call set-up cost from that of the incremental per-minute cost. Second, he disagrees with the assertion in the Taylor Declaration that line CCS costs for Internet-bound traffic are not traffic-sensitive and should, therefore, be omitted from the calculation of the per-minute incremental cost of carrying such traffic.

13. Even if, for the sake of argument, the per-minute incremental cost were the same for Internet-bound and local voice traffic, the current rate structure adopted for reciprocal compensation *is* a matter of significant concern. While we are encouraged by Mr. Wood's support for a two-part rate structure (to distinguish the recovery of fixed costs from that of incremental costs), we are not optimistic about its prospects for widespread adoption any time soon. We note that the same, more efficient rate structure could equally be proposed

for switched access service (which too incurs fixed and traffic-sensitive or incremental costs) but that, by long-standing tradition, switched access rates have been single-part composites intended to recover both fixed and traffic-sensitive costs. Similarly, the FCC's policy for reciprocal compensation for local voice traffic is based on a single-part rate that applies equally in both directions (i.e., to both the ILEC and the CLEC), *regardless* of any differences in the underlying costs of the two networks to carry local calls. Therefore, as long as that rate structure persists for Internet-bound traffic, the inefficiency and perverse incentives generated by extending to Internet-bound traffic the reciprocal compensation rate designed for local voice traffic will remain a matter of substantial concern.

14. Mr. Wood also misunderstands why certain traffic-sensitive costs do not arise for CLECs that serve ISPs through ISDN Primary Rate Interface ("PRI") facilities. Those ISP-serving CLECs typically build switches at a concentration ratio of 1:1. Therefore, for those carriers, line CCS costs are fixed with respect to usage. Each line serving an ISP has a *dedicated* path through the switch processor and increased usage from other lines does not impact the use of the line serving the ISP. No matter what the demand is from other lines, the path serving the ISP always remains available for customers calling the Internet. Since the circuit is dedicated to the ISP line, the use of the facility does not impose congestion costs on other users and no rationing or call blocking is imposed on the network as a result. Although the same network elements are used for local voice traffic, inter-carrier compensation for Internet-bound traffic should not include line CCS costs because those costs do not vary with additional usage and are, therefore, not incremental costs of delivering Internet-bound calls.

IV. RECIPROCAL COMPENSATION FOR INTERNET-BOUND TRAFFIC CREATES PERVERSE INCENTIVES AND HARMS ECONOMIC EFFICIENCY

15. Mr. Wood questions several strands of the conclusion in our earlier paper and the Taylor Declaration that reciprocal compensation for Internet-bound traffic using the compensation rate set for local voice traffic can generate perverse incentives for CLEC and ISP behavior that harms economic efficiency. For example, while agreeing that Internet-bound traffic has increased network usage costs, Mr. Wood sees no basis to conclude that "the mismatch

between costs and rates has been created by the involvement of CLECs or has increased in magnitude because of the involvement of CLECs." [Wood Comments, at 18] As he sees it, the extent to which that mismatch between costs and rates (hence, any scope for inefficiency) arises does not depend on whether the Internet-bound traffic originated by the ILEC's subscribers gets handed off to ISPs being served by the ILEC or to other ISPs being served by CLECs. In Mr. Wood's words:

> If the reciprocal compensation rates are properly established at a level equal to the ILEC's forward-looking economic costs of call termination, there is no net cost impact when call termination costs are avoided and replaced by reciprocal compensation. [Wood Comments, at 19]

16. Even if the harms to economic efficiency were to materialize from reciprocal compensation for Internet-bound traffic, Mr. Wood does not believe that the right policy answer is to deny the CLEC compensation for delivering Internet-bound calls received from the ILEC's subscriber to the ISP. [Wood Comments, at 20] The net effect of such a policy, Mr. Wood believes, would not be a reduced mismatch between costs and rates, but simply a migration of ISPs from CLECs to the ILEC that will continue to be compensated from the local rates it charges its subscribers.

17. Mr. Wood also discounts the prospects for diminished incentives for CLECs that receive reciprocal compensation for Internet-bound calls to serve residential local exchange customers. He dismisses the possibility that paying reciprocal compensation to CLECs at rates reflecting the ILEC's incremental cost of call termination could make serving residential local exchange customers less financially appealing. [Wood Comments, at 21]

18. Finally, Mr. Wood rejects fears that uneconomic arbitrage can arise from applying reciprocal compensation to Internet-bound traffic. In his view, such arbitrage "exists only if reciprocal compensation rates have been established at levels that exceed the ILEC's cost of call termination." [Wood Comments, at 22] While conceding that "[c]ost-based rates effectively eliminate [the] incentive" for arbitrage, Mr. Wood asserts that the one example of arbitrage by US LEC of North Carolina is insufficient to merit rejection of reciprocal compensation for Internet-bound traffic.

19. We disagree with all of these conclusions reached by Mr. Wood. As is readily evident from Mr. Wood's discussion of the issues, many of those conclusions stem from assuming that "trading call termination costs for cost-based reciprocal compensation" alters none of the outcomes expected when the ILEC alone serves both the Internet user and the ISP and incurs both call origination and call termination costs. From this, we surmise that Mr. Wood sees the cost of call termination, for Internet-bound traffic, as being the same for both the ILEC and the CLEC.[5]

A. The Mismatch of Rates and Costs Aggravates Economic Inefficiency

20. Economic efficiency (specifically, a form of it called *allocative* efficiency) suffers when incremental revenues (i.e., rates) are out of line with incremental costs. Relative to the economically efficient level, any rate higher than incremental cost encourages excessive supply of the product or service in question, while a rate below incremental cost encourages excessive demand for that product or service. Thus, if the compensation rate available to the ISP-serving CLEC exceeds its incremental cost to deliver Internet-bound traffic to ISPs, we should expect a strong incentive for CLECs to get into the business of serving ISPs, perhaps even specialize in doing so, i.e., at the expense of providing traditional local exchange voice services. Mr. Wood does not address this issue because he fails to recognize or accept that the ISP-specializing CLEC's incremental cost to deliver Internet-bound traffic is likely to be below the compensation rate typically adopted, the *ILEC's* cost to terminate local *voice* calls. Nor does Mr. Wood account for the increasingly familiar situation of highly unbalanced traffic flows between ILECs and CLECs. There is now considerable evidence that the overwhelming percentage of Internet-bound traffic flows occur from ILECs to ISP-serving CLECs, and that CLECs are often formed simply to specialize in serving ISPs[6] and collect reciprocal compensation.[7]

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[5] Mr. Wood repeatedly characterizes the function performed by the ILEC or the CLEC to deliver an Internet-bound call to an ISP as call "termination." We refrain from using the same characterization because, technically, a call can only be terminated to an end-user. As we argued before, ISPs are not end-users, hence CLECs do not terminate Internet-bound calls to them.

[6] According to a recent survey, about 62 percent of national ISPs plan to partner with CLECs, 46 percent plan to merge with CLECs, and nearly 66 percent plan to lease CLEC facilities. See Infonetics Research, "The National (continued...)

21. While Mr. Wood accepts the principle that reciprocal compensation should be cost-based, he clearly errs in designating whose cost should be used for that purpose. The assertion that uneconomic arbitrage could only occur if the compensation rate exceeded the *ILEC's* cost of call termination is false and fails to recognize that it only takes that rate to exceed the *CLEC's* cost of call termination for arbitrage opportunities to be created. Unfortunately, even though arbitrage is typically a rational response to distortions in existing rates and costs, a policy of reciprocal compensation for Internet-bound traffic can only perpetuate—not mitigate—the problem as long as commentators like Mr. Wood fail to make the proper rate-cost comparisons or set compensation rates based on costs of local voice traffic rather than on costs of Internet-bound traffic.

22. As we noted in our earlier paper, evidence that reciprocal compensation payments exceed CLECs' costs of handling Internet-bound traffic could not be more clear. Non-traffic sensitive loop costs and traffic-sensitive costs of telephone companies arise, on average, in about an 80:20 proportion. With reciprocal compensation designed solely to recover the costs of handling Internet-bound traffic, we should expect cost-based reciprocal compensation revenues to average about a quarter of the competitive market-based revenues from supplying local exchange loops. As we noted in our earlier paper, in Louisiana alone, ILECs' (i.e., BellSouth's) reciprocal compensation obligations—ostensibly to recover the traffic sensitive switching and transport costs to terminate traffic—

(...continued)

ISP Opportunity 1998." CLEC and ISP functions are converging as well: new technologies such as softswitches, virtual ISP POPs, and managed port services for ISPs outsource current ISP functions to CLECs, further blurring the distinction between the CLEC and the ISP.

[7] Both the Massachusetts regulators and the FCC have taken note of the web site claims of ISG-Telecom Consultants International, a Florida-based company formed in the aftermath of the Telecommunications Act of 1996 that promises to turn ISPs into CLECs and IXCs with their own ISP operations. As a rationale for doing so, ISG-Telecom believes that "... as a facility based CLEC, the ISP/CLEC should be able to participate in *reciprocal compensation* with the carriers, providing there is not a negative ruling from the FCC in up and coming months." (emphasis added in part) Clearly, arbitrage opportunities presented by the payment of reciprocal compensation for Internet-bound traffic, not an inherently efficient network arrangement, lies at the heart of this mission statement.

were more than three times the CLEC's revenue from non-traffic sensitive local exchange rates.[8]

B. ILEC Compensation of CLECs for Internet-Bound Traffic is Not Economically Efficient

23. While Mr. Wood is certainly correct that CLECs should be compensated for their role in delivering to ISPs Internet-bound calls originated by other carriers, he is mistaken in believing that that compensation should be received from those carriers. To achieve an economically efficient outcome, it is first necessary to view the ILEC and the CLEC as jointly provisioning access to the ISP and, therefore, to the Internet. With this supply arrangement in view, the next step is to require the ISP and the cost-causer, the ISP's customer, to compensate both the ILEC and the CLEC for the costs they incur on their behalf. This is no different from requiring the IXC and the cost-causer, the IXC's customer, to compensate all LECs involved in providing switched access for long distance calls.

24. With ISPs and their customers compensating the ILEC and the CLEC directly, there can be no further reason to maintain an ill-advised reciprocal compensation mechanism for Internet-bound calls between those LECs. Hence, the perverse outcome feared by Mr. Wood—the migration of ISPs from CLECs to the ILEC—can never come to pass. In other words, with the proper cost-causative form of compensation—rather than reciprocal compensation—in place, the form of inefficiency envisioned by Mr. Wood becomes moot.

C. Reciprocal Compensation for Internet-Bound Traffic Creates Opportunities for Arbitrage

25. Mr. Wood's efforts to downplay the significance of arbitrage notwithstanding, it is important to understand just how easily the first-level inefficiency (created by the failure to adopt a cost-causative form of inter-carrier compensation for Internet-bound traffic) can be

[8] "KMC generated approximately $636,427 in revenue from providing service to its ten Louisiana ISP customers during the same time period that it billed BST $2,160,985 in reciprocal compensation for traffic to those ten ISP customers." Louisiana Public Service Commission, Order No. U-23839, *KMC Telecom v. BellSouth Telecommunications, Inc.*, October 13, 1999, Factual Finding No. 13.

compounded by a poorly designed reciprocal compensation rule. The example of US LEC's blatant attempts at arbitrage may be particularly egregious, but it is not the only evidence of opportunistic schemes to make and maximize revenues from reciprocal compensation (see fn. 7).

26. We agree with Mr. Wood that the compounding inefficiency due to reciprocal compensation can be avoided by adopting cost-based compensation rates. However, that is only the minimum requirement. As we stated before, to avoid arbitrage, the compensation rate must reflect a carrier's actual cost to handle Internet-bound, not local voice, traffic. Thus, the ILEC and the CLEC would each be compensated only to recover their respective costs to handle that traffic. This brings up the possibility that the ILEC and the CLEC would have different costs and have to be compensated at different rates, especially if the ILEC provides the full spectrum of local exchange services and the CLEC specializes only in serving ISPs. All of these requirements mark a significant departure from the current practice of (1) extending reciprocal compensation rates set for local voice traffic to Internet-bound traffic as well and (2) charging that rate symmetrically between the ILEC and the CLEC. Mr. Wood fails to acknowledge just how much more is needed to avoid opportunities for arbitrage than merely setting "cost-based compensation rates."

V. CONCLUSION

27. Two conclusions emerge from this discussion. First and foremost, regardless of the level and structure of the costs of transport and termination, cost causation requires that ISPs' customers face directly the costs their usage impose on the network, just as long distance customers pay for those costs directly to the IXC, which then compensates the LECs that jointly facilitate the long distance calls. That same mechanism preserves efficiency incentives for Internet-bound traffic: customers of the ISP pay the ISP for the services they demand, and the ISP reimburses the LECs that jointly carry such traffic. This mechanism—and not reciprocal compensation—applies cost causation and minimizes the efficiency losses from subsidy and other competitive distortions inherent in the ESP exemption.

28. Second, if reciprocal compensation is (incorrectly, in my view) chosen as the inter-carrier compensation mechanism, serious problems must first be addressed. Economic distortions stemming from inefficient subsidies to dial-up Internet-bound traffic, warped incentives in local exchange competition, and profit opportunities from uneconomic arbitrage can only be mitigated if the rate level and structure for reciprocal compensation are made to reflect the actual cost characteristics of Internet-bound traffic and of the ILECs and CLECs that carry it.